

radiation; and

c) determining whether the water exists in the structure, based on the second radiation sensed in said step (b),

the predetermined area of the structure exposed in said step (a) being at least one square meter.

10. (Once Amended) A method comprising the steps of:

a) exposing with a generator a predetermined area of a structure with the first electromagnetic radiation including at least one predetermined wavelength that is significantly absorbed by water;

b) sensing with a sensor unit second electromagnetic radiation from the structure, the second electromagnetic radiation based on the first electromagnetic radiation;

c) determining whether a water-suspect area exists in the structure, based on the second radiation sensed in said step (b);

d) if said step (c) determines that a water-suspect area exists in the structure, testing the water-suspect area using at least one of a moisture detector, a capacitance meter, an endoscopic probe, and a resistivity meter; and

e) determining whether water is present in the structure, based on the testing of said step (d).

12. (Once Amended) A method comprising the steps of:

a) exposing with a generator a predetermined area of a structure to electromagnetic radiation including at least one predetermined exposure wavelength significantly absorbed by water, and at least one predetermined reference wavelength that is not significantly absorbed by water;

b) sensing with a sensor unit electromagnetic radiation from the exposed predetermined area of the structure at a predetermined detection wavelength that is sensitive to the exposure wavelength if water is present in the exposed predetermined area of the structure, and that is not sensitive to the exposure wavelength if water is not

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present in the exposed predetermined area of the structure, and at the reference wavelength;

c) determining whether the exposed predetermined area of the structure includes a water-suspect area, based on the electromagnetic radiation sensed in said step

5 (b) at the detection and reference wavelengths;

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d) if said step (c) determines that a water-suspect area exists in the structure, testing the water-suspect area using at least one of a moisture detector, a capacitance meter, an endoscopic probe, and a resistivity meter; and

e) determining whether water is present in the structure, based on the
10 testing of said step (d).

18. (Once Amended) A method comprising the steps of:

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a) generating with a generator electromagnetic radiation including at least one predetermined exposure wavelength that is significantly absorbed by water and is not significantly absorbed by material composing the structure, and at least one
15 predetermined reference wavelength that is not significantly absorbed by water and the material composing the structure;

b) exposing with the generator a predetermined area of the structure with the generated electromagnetic radiation;

c) sensing with a sensor unit at least a portion of the generated radiation
20 from the exposed area of the structure to determine a first intensity level of the radiation at the exposure wavelength, and a second intensity level at the reference wavelength;

d) comparing the first and second intensity levels;

e) determining that the water-suspect area includes water if the first and second levels differ by at least a predetermined amount; and

25 f) determining that the water-suspect area includes no water if the first and second levels do not differ by at least the predetermined amount.

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19. (Once Amended) A method as claimed in claim 18, the method further comprising the steps of:

before the performance of said steps (a) - (f),